

COPPER CMP FLATNESS MONITOR USING GRAZING INCIDENCE  
INTERFEROMETRY

This application is a continuation in part of  
5 United States Patent Application 08/930,378, entitled  
"Apparatus and Method for measuring Two opposite  
surfaces of a Body" filed on September 24, 1997, which  
is the U.S. National Phase Application of ~~WO 97/27452~~, <sup>EP 96/03381</sup>  
filed on August 1, 1996, the entirety of which is  
10 hereby incorporated by reference.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates generally to the  
15 art of optical inspection of specimens, such as  
semiconductor wafers and hard disk surfaces, and more  
specifically to a system for determining surface  
topographies in the nanometer range using optical  
techniques.

20 Description of the Related Art

Optical inspection techniques for specimens, such  
as semiconductor wafers, have assessed the relative  
flatness of specimen surfaces using various  
techniques. Surface flatness is a critical parameter  
25 used to determine the overall quality of a  
semiconductor wafer, and wafers having large irregular  
areas or small areas with radical height differences  
are undesirable.

For CMP (Chemical Mechanical Planarization)  
30 processed wafers, the starting material is a bare  
silicon wafer. Such a bare silicon wafer must be flat